Effects of Redistricting Methods on Election Outcomes and Congressional Polarization, 2002-2010

Honors Research Thesis

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Abstract

Every decade the United States conducts a census of the population, which is used to allocate congressional seats amongst the states. To reflect this change, states also redraw their voting districts. They do this in three major ways: through their state legislatures, through an independent commission, or through a hybrid system. This paper contends that these different means of redrawing states' districts have differing effects on the outcomes of congressional elections, as well as on the level of polarization in Congress. Specifically, this paper examines election data for the House of Representatives from each state during the years 2002 to 2010, as well as calculated scores of polarization for each elected candidate. Using this data, this paper analyzes the relative impact of each redistricting method and how it accounts for the current level of polarization in the House of Representatives. Lastly, this paper will use these findings to make policy recommendations for the future.

Table of Contents

Introduction

Last November, a New York Times/CBS News poll reported that only 12 percent of Americans approve of the job Congress is doing. Many politicians, media figures, and normal citizens have lost faith in the government, become fed up with political bickering, and claimed that Congress is "broken" (Svenson and Thompson, 2011). This polarization has been exacerbated by a shift away from moderation and a lack of compromise. According to a recent Gallup poll, items related to gridlock, such as bickering, a lack of compromise, and a lack of making decisions, accounted for 59 percent of why Americans disapprove of the job Congress is doing (Saad, 2013). If the view of this gridlock and inefficiency is so overwhelmingly negative, why is Congress so polarized?

One theory is that there is a relationship between congressional polarization, the level of competition within voting districts, and the methods by which states redraw these district lines. Thomas Mann and Bruce Cain posit that redistricting is "one of the forces responsible for the ills associated with contemporary congressional elections, from the decline of competitive seats to the growing ideological polarization of the parties" (2005). Works by Jamie Carson and Michael Crespin show that "more competitive elections occur when courts and commissions are directly involved in the redistricting process, as opposed to when redistricting is handled only in the state legislative process" (2004). They also have done research showing that elevated levels of party polarization can be partly attributed to redistricting (Carson et al., 2007). Additionally, Dennis Thompson concludes that partisan redistricting is an anti-democratic measure that undermines popular control because it gives "the representatives who are to be controlled significant influence over the means by which they are controlled" (2004).

However, another view is that having non-competitive districts allows voters to be more

pleased with the outcome of their elections, making Congress a better view of the people's voice. Thus, polarization is a reflection of the people's interests. Justin Buchler claims that competitive districts actually work against the goals of democracy because they decrease representation, whereas non-competitive districts "lead to smaller ideological differences between the positions of district median voters and their representatives…and a distribution of ideology in the legislature that is closer to the distribution of ideology in the electorate" (2005). Thomas Brunell echoes this claim, arguing that states should "pack districts with as many like-minded partisans as possible" because voters whose preferred candidate wins are systematically happier than those who did not vote for the winning candidate (2006). He also says that the safe district method "always produces representation that reflects the partisan leanings of the state" and allows the representative "to be responsive to the entire district since the constituents all belong to the same party" (Brunell, 2008).

The difference between these two views boils down to efficacy versus voter happiness. The first argument lauds competition and limited polarization because it makes Congress more efficient by lessening gridlock. The other argument claims that non-competitive districts allow voters to be happy with the results of elections, thus creating a better form of representation. However, as the two aforementioned polls show, voters are neither happy with the job that their representatives are doing, nor the polarization within Congress. This paper takes the view that government's main purpose is to properly serve the people whom it represents. While safe districts and polarized parties might work well in a multi-party environment where coalitions are possible, in a two party system these things affect gridlock, limiting the ability of government to serve its role. To this end, this paper aims to prove that competition within districts is related to the method by which states redraw their districts, specifically concerning the level of partisan

involvement. Additionally, this paper will show that district competition is a contributing factor to government polarization.

These claims will be shown through an analysis of election outcomes, levels of polarization, and methods of redistricting in the United States from the years 2002-2010, particularly focusing on elections for the House of Representatives. The next section provides background information on how states redistrict, followed by the methodology of this study, the results and their analysis, and conclusions that can be drawn from it, as well as recommendations for future action.

Background

Regulations

In order to fully understand the possible effects of congressional redistricting, it is important to first know about how the process works. Apportionment is the process by which seats in the House of Representatives are allocated to states, and reapportionment is adjustment of this allocation every ten years based on population and coinciding with the federal census. At a minimum, then, states must redistrict every decade (Levitt and Wood, 2010)

The regulations for redrawing districts are split into two parts: those controlled by the federal government and those controlled by the states. There are two major federal regulations that congressional redistricting plans must follow. The first involves district populations. According to federal law, each state's districts must have equal population “as nearly as is practicable” (Wesberry v. Sanders, 1964). This means that states must attempt to draw districts so that each one is as close as possible to the “ideal” district and any major deviation from this must

be specifically justified (Levitt and Wood, 2010). For example, if your state had five districts and one hundred residents, your "ideal" district would have twenty people. In the 2000 redistricting cycle, no states had average population deviations over one percent (National Conference of State Legislatures, 2004).

The other federal regulation involves race and ethnicity. In the past, different tactics have been used to limit the voting power of minorities. Two of these tactics are "cracking" and "packing". Cracking is unfairly splitting up a voting minority over many districts to dilute their voting power. Packing, on the other hand, is when as much of a minority is drawn into one district as possible in order to keep all of their voting power in one area. Other tactics that have been used include voting prerequisites, such as passing a particular test before voting (Levitt and Wood, 2010).

However, these prejudicial practices are not allowed in the redistricting process. According to the Voting Rights Act, "No voting qualification or prerequisite to voting, or standard, practice, or procedure shall be imposed or applied by any State or political subdivision to deny or abridge the right of any citizen of the United States to vote on account of race or color" (1965). The Supreme Court has also declared in multiple rulings that neither race nor ethnicity can be the predominant reason for a district's shape (Bush v. Vera, 1996; Shaw v. Reno, 1993; Miller v. Johnson, 1995).

In order to prevent these abuses, some states, or part of states, that have historically had issues with voting equality were subject to a process called preclearance, meaning that the Department of Justice must approve their redistricting plans (Voting Rights Act, 1965). In the 2000 cycle, 16 states were affected by preclearance: Alabama, Alaska, Arizona, Georgia, Louisiana, Mississippi, South Carolina, Texas, most of Virginia, four counties in California, five

counties in Florida, two townships in Michigan, 10 towns in New Hampshire, three counties in New York, 40 counties in North Carolina, and two counties in South Dakota (The Leadership Conference on Civil and Human Rights, 2013). Redistricting plans were usually approved if they did not dilute minority votes or cause retrogression in the political opportunities of minorities. Retrogression occurred if the new plan gave minorities a lessened opportunity to elect their candidates of choice, relative to the prior plan (Levitt, 2013). However, as of June 2013, the Supreme Court struck down the section of the Voting Rights Act that requires preclearance on a 5-4 ruling in the case of Shelby County v. Holder. Regarding racial discrimination in redistricting, the opinion stated that "things have changed dramatically" in the South and other regions since the Voting Rights Act of 1965 was passed (Reilly et al., 2013).

Beyond these federal rules, states also institute further regulations. These additional guidelines vary from state to state, but they are used to achieve the same basic goals. The most common goal is district contiguity. This means that all parts of a district are physically connected and adjacent, as opposed to having sections of the district split apart by other districts. Another common goal of state regulations is to limit the splitting of political boundaries, such as counties, cities, and townships. However, states vary in how much flexibility they allow, and these boundaries sometimes need to be split in order to accommodate the federal requirements, which supersede state laws. Additionally, states often try to maintain "compact" districts. While this is a vague term, again with much variation, it generally means that the populations within a district are relatively close together. This compactness can be shown by how far people live from the center of their district, or whether or not populations near a district are bypassed for ones that are further away. Another common goal is to maintain "communities of interest". A community of interest is basically any group of the population in an area with similar interests, whether social,

cultural, or economic. The other goals listed above often fulfill this on their own (Levitt and Wood, 2010). These goals are generally considered positive; however, there can be a goal of redistricting that is negative. Gerrymandering is the conscious manipulation of district lines in order to achieve some sort of political power. There are two major varieties; one is partisan gerrymandering, which is when a particular party draws district lines in a way that favors itself. The other type is incumbent protection, by which the parties in a state agree to divide districts in a way that maintains the balance of power (Levitt and Wood, 2010).

Models

For the purpose of this paper, the different ways in which states redraw their federal congressional districts have been broken down into three major categories. The first category is by a legislature-controlled process. 33 states use this type of process. Some of them introduce plans as a normal legislation, while others form joint or special committees. Either way, they all place the responsibility of redistricting in the hands of the state legislature (FairVote, 2004). Additionally, some states require that, if the legislature fails to enact a plan within a certain period of time, state or federal courts must step in to redraw the districts. In the 2000 cycle, seven of these states (Colorado, Minnesota, New Mexico, Oklahoma, Oregon, South Carolina, and Texas) had to have their districts redrawn by the courts (Levitt, 2013). All of the states give veto power to the governor, except for North Carolina (FairVote, 2004). It is important to note that California implemented an independent commission system for the 2010 cycle and beyond (Howle, 2009), and also that states often do not draw their state legislature districts with the same methods as their federal districts.

Two of the states with legislature systems redistricted multiple times in this cycle. One of the states was Georgia, in which the legislature redrew districts again in 2005. One reason this

happened was because the legislature decided that there was too much splitting of county borders. The other reason was because Georgia's Republican-controlled legislature hoped to give Republicans two more seats in the 2006 midterm elections. However, the Democratic candidates, John Barrow and Jim Marshall, both held onto their seats (Hood and McKee, 2009). This was a modest attempt compared to Texas, the other state that re-redistricted. After the 2000 census, Texas's congressional districts had been drawn by a federal court. However, once Republicans took back control of the state government in 2003, they decided to attempt a second redistricting process. Twice during this process, the state's Democratic representatives actually fled the state in order to deny a quorum, which is the minimum number of representatives needed to be present in order to cast an official vote. After lots of bickering and a media frenzy, a plan was eventually adopted that swayed the state's federal delegation even further in favor of the Republicans (Congressional Districts in the 2000s, 2003). As these examples show, sometimes legislatures can have very partisan agendas when it comes to redistricting.

Four states use hybrid plans that also use some sort of independent commission in order to put a check on the redistricting power of the legislature. Maine has an Advisory Apportionment Commission that is made up of 15 members. 12 of them are people appointed by the majority and minority leaders in the state House and Senate, and the other three are general members of the public. The Commission creates a plan for redistricting and submits it to the legislature, which has the authority to alter it (FairVote, 2004). If the legislature still cannot approve a plan, the duty of redistricting falls to the state Supreme Court, as was the case in the 2000 cycle (Levitt, 2013).

In Connecticut, Illinois, and Mississippi, the legislatures have primary responsibility for redistricting plans. However, if they fail to enact a plan by a particular deadline, a backup

commission is put in place to redraw the districts (FairVote, 2004). In the 2000 cycle, Connecticut and Illinois both resorted to these backup commissions (Connecticut State Data Center, 2003; Levitt, 2013). Mississippi did as well; however, it too failed to put forth a plan, and the districts were drawn by a state court (Levitt, 2013).

For congressional districts, six states basically remove the control of the legislature altogether by implementing redistricting systems that use independent commissions. They are Arizona, Hawaii, Idaho, Iowa, New Jersey, and Washington. Arizona redistricts using its Independent Redistricting Commission. This five-member commission acts independently of the State Legislature. The state Commission on Appellate Court Appointments nominates 10 Republicans, 10 Democrats, and five independents. From the 25 nominees, two from each party are selected for the commission by party leaders in the state House and Senate, and those four then choose one of the nominated independents to serve as chairman. The commission does not base its districting off of previous years, but rather starts with a grid map only considering equal population and contiguity. It then modifies the map to account for four other criteria: compliance with federal regulations, maintaining communities of interest; maintaining geographic features and borders, and the creation of competitive districts, so long as it does not interfere with the previous goals (Arizona Independent Redistricting Commission, 2011).

Hawaii, New Jersey, and Washington all have very similar systems. Party leaders appoint equal numbers of people to the commissions, none of whom may be government officials. Hawaii has eight members, New Jersey 10, and Washington four. The commissioners work together to appoint another member, who acts as chairman. However, if they cannot decide within a certain time frame, the state Supreme Courts select the final member (Hawaii Office of Elections, 2001; New Jersey Apportionment Commission 2013; FairVote, 2004).

Idaho's commission is slightly different from those of Hawaii, New Jersey, and Washington. It is comprised of six members who are not government officials, appointed by party leadership in the state House and Senate, as well as the chairs of the state parties. However, instead of appointing their own chair to make the commission an odd number, thus avoiding ties in decision-making, Idaho's commission instead works with an even number. If the reapportionment commission cannot reach a decision, the matter is decided by the state Supreme Court (Idaho Legislative Services Office, 2002). In the 2000 cycle, the commission was able to reach a decision on its own (Levitt, 2013).

Iowa's redistricting system uses a non-partisan government body, the Iowa Legislative Service Agency, for drawing its districts (Cook, 2007). The ILSA cannot consider data like previous election results, incumbents' residences, or the political affiliation of registered voters when drawing districts. Its driving goal is to make the districts as equal in population as possible, while including other considerations such as compactness, maintaining county borders, and keeping districts contiguous. According to Ed Cook, senior legal analyst with the Legislative Services Agency, "The thing that makes us unique to most states is basically we don't take into account any political information" (Nelson, 2010). While the ILSA's plan is technically subject to the approval of the Iowa state legislature, there has not been any history of contention since implementing their system (Levitt, 2013).

Methodology

This paper is concerned with the effects that different methods of redistricting may have on the competitiveness of congressional elections, as well as the level of polarization within Congress. Because of this, a period of five federal elections for the House of Representatives is

examined. These five elections occurred in 2002, 2004, 2006, 2008, and 2010, and correspond to the 108th, 109th, 110th, 111th, and 112th Congresses. All of these elections happened after the 2000 census and before the publishing of the 2010 census results. Thus, this series of elections, for the most part, are consistent in terms of how each state's districts are drawn, as well as the apportionment of representatives to each state. It is also important to note that this paper only observes 43 of 50 states. This is because seven states (Alaska, Delaware, Montana, North Dakota, South Dakota, Vermont, and Wyoming) only have one district, making them irrelevant to a study of redistricting.

One of the major areas of data used is the election outcomes during these years. Within each state, the percentages of votes garnered by the winning candidates were closely examined. Candidates who ran unopposed were credited with receiving 100 percent of votes. The election outcome data was gathered from Wikipedia.org. The other major form of data is the measurements of congressional polarization by means of scoring roll-call voting, or the totality of votes in a session of Congress. These measurements come from a system created by Jeffrey B. Lewis, Keith T. Poole, and Howard Rosenthal. Their system calculates the relative polarization levels within different sessions of Congress, which are referred to as *DW-NOMINATE* scores (Lewis, Poole, and Rosenthal 2013).

DW-NOMINATE was developed as an alternative to ideology ratings published by interest groups. These interest groups typically select a small number of votes that they deem important, and use those votes to assign rankings (Trende, 2012). However, this approach leads to large amounts of bias and a rather extreme perception of ideology. Conversely, DW-NOMINATE is designed to show a more neutral view of a legislator's ideological profile by factoring in all votes. Thus, it attempts “to reverse-engineer the ‘ideology’ from the votes,

without looking at the content of the votes themselves" (Trende, 2012).

In order to do this, DW-NOMINATE operates under the assumption that legislators with similar ideologies will vote together more frequently than those with differing ideologies. Basically, a conservative Republican will vote in line with other Republicans more frequently than with a liberal Democrat (Trende, 2012). It is important to note that these scores are not measures of ideology in and of themselves; rather, they are measures of polarization, or how far apart politicians' voting is. DW-NOMINATE plots all votes from a particular session of Congress on a linear scale, and then gives each member a score, mostly ranging from -1 to 1, based on their distance from the center.

This process is much like measuring distance between cities. For example, if Cincinnati, Columbus, and Cleveland were all plotted on a line based on distance, Cincinnati and Cleveland would be on opposite sides, with Columbus in between but slightly closer to Cincinnati. While this linear perspective only offers insight into where the cities are located relative to each other, a practical knowledge of the state of Ohio helps determine that Cincinnati is in the southwest, Columbus in the center, and Cleveland in the northeast. In a similar fashion, a practical knowledge of the current political landscape helps to develop an understanding of how these scores of polarization relate to ideological standing. For example, in the 112th Congress, the conservative John Boehner (R-OH) and the liberal Dennis Kucinich (D-OH) voted very differently from each other. This results in Boehner having a score close to 1, whereas Kucinich's score is closer to -1, and most other representatives fall in between. Thus, if zero is the middle of the polarization scale, scores above zero tend to be Republican and scores below zero tend to be Democrat.

This paper also labels states by the way they draw their new districts. Most states rely on

their state legislatures to pass redistricting plans. These systems might vary slightly, such as whether or not the governor has the power to veto the plan, or whether or not the state courts may intervene if the legislature fails to pass a plan in a certain period of time. However, as a general rule, these states can be categorized as one group. Another way states redistrict is by forming an independent commission that operates outside the government. Again, there may be some variation, especially in how the commissions are formed, but due to their independent and non- or bi-partisan nature, they are effectively grouped together. The third category consists of states that use a hybrid system. This means that an independent commission either assists the legislature in forming a redistricting plan, or, if the legislature fails to meet their deadline for passing a plan, the task of redistricting is turned over to an independent commission. In the tables that will be seen in the next section, the categories are listed as *legislature*, *commission*, and *hybrid*, and the specifics of each state's method has been discussed above in further detail.

The last major element of this paper's methodology is multiple regression analyses. One analysis examines the relationship between redistricting and the competitiveness of elections, in which the three models of redistricting are the independent variables, and the percentage of the total votes gained is the dependent variable. In order to factor in the models of redistricting, each type was treated as a "dummy" variable. This means that a positive result receives a "1" and a negative result receives a "0". For example, for the commission system variable, if a state has a commission system it receives a "1". If it does not, it receives a "0". The same is true for the hybrid and legislature system variables. When doing the regression, only two of the three variables need to be accounted for because their outcomes are relative to the outcome of the third. Thus, this paper tests the commission and hybrid system dummy variables, and examines their outcomes in relation to legislature systems.

The other two analyses focus on the relationship between the competitiveness of elections and the polarization of representatives from each political party. In these, the percentage of the total votes gained is the independent variable, and the Democratic and Republican polarization scores serve as the dependent variables. For all regressions used, the maximum permitted significance has been set at 0.05. This means that in order for a relationship to be considered accurate, the chance that it occurred randomly must be below five percent. This is a standard benchmark in linear regression. These different regressions were conducted using the IBM SPSS Statistics software.

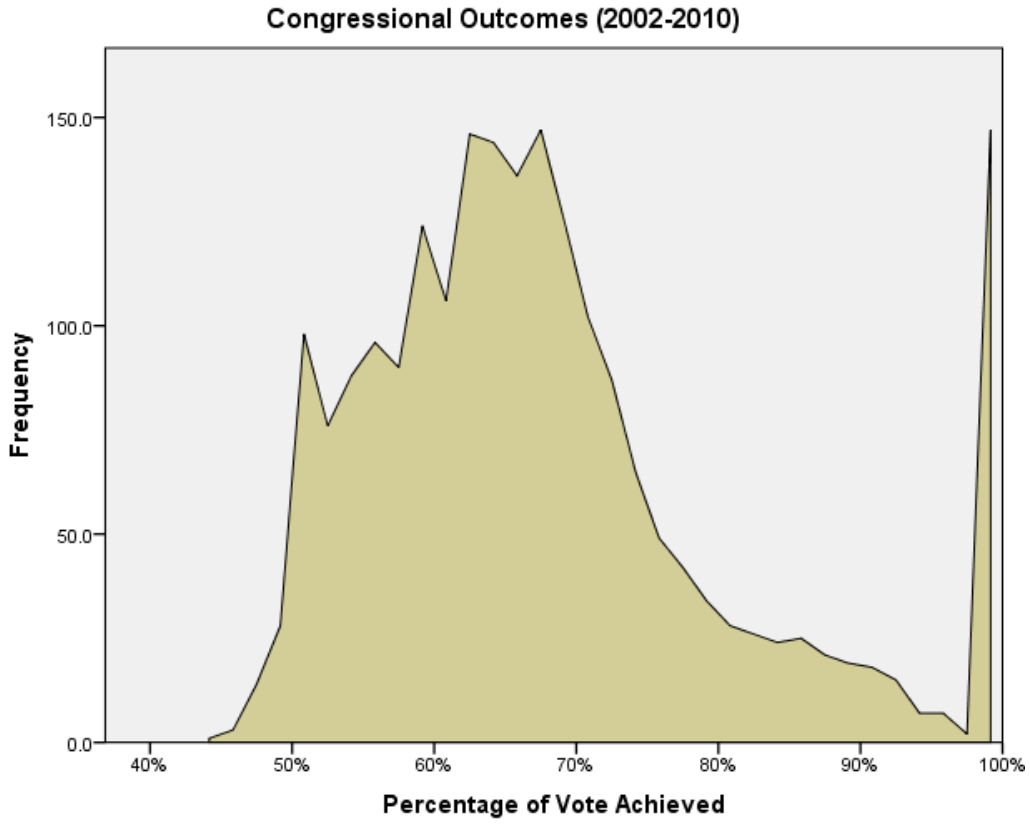
This study focuses on methods of redistricting, competitiveness of districts as measured by the percentage of votes garnered by winning candidates, and the polarization of representatives. This approach does have a major limitation because it considers voters to be a constant. This means that regional and district differences in things like party alignment, demography, and levels of urbanization are not factored into the analysis. Additionally, the benefits of incumbency, such as more exposure to voters, are not considered.

Results

The table on the following page presents each state's data for their congressional elections for the years 2002 through 2010. It shows the average percentage of votes garnered by the winners of states' elections and the standard deviations from those averages. Additionally, it shows the number of Democratic and Republican representatives for each state during the five Congresses.

State Statistics for Congressional Election Ouctomes (2002-2010)		
State	**Avg Pct of Vote**	**Standard Deviation**
AL	76.1%	17.6%
AZ	60.8%	8.1%
AR	72.9%	16.2%
CA	69.0%	11.1%
CO	61.0%	7.9%
CT	61.7%	8.9%
FL	71.4%	16.4%
GA	74.1%	16.1%
HI	66.4%	8.3%
ID	62.0%	9.1%
IL	69.4%	12.3%
IN	60.1%	7.1%
IA	57.1%	4.8%
KS	64.7%	12.4%
KY	65.0%	12.0%
LA	71.6%	16.6%
ME	59.9%	5.9%
MD	70.1%	10.1%
MA	81.6%	17.8%
MI	66.6%	10.9%
MN	60.8%	7.4%
MS	66.6%	9.0%
MO	65.6%	7.5%
NE	67.6%	13.2%
NV	58.3%	8.5%
NH	55.1%	4.4%
NJ	67.7%	11.6%
NM	60.8%	12.5%
NY	72.6%	15.1%
NC	64.7%	9.1%
OH	64.4%	10.6%
OK	68.6%	9.9%
OR	64.4%	8.5%
PA	67.3%	15.3%
RI	66.6%	7.9%
SC	67.0%	11.4%
TN	70.8%	11.2%
TX	70.0%	12.9%
UT	62.0%	6.7%
VA	68.5%	15.3%
WA	63.1%	8.1%
WV	67.4%	14.5%
WI	68.1%	11.7%

The graph below relates to the previous table. It shows the number of representatives that achieved certain percentages of the vote. The minimum vote achieved by a winner was 44.8 percent (Jean Schmidt, R-OH). The maximum was 100 percent, meaning those running were unopposed. The average was 68.0 percent.



Source: Wikipedia.org

The next table represents state statistics for representatives' polarization scores. For each state, it shows the average polarization score for each party over the five Congresses, as well as the standard deviation of all scores. Massachusetts had the most polarized Democrats, with an average score of -0.51, and Oklahoma had the least polarized Democrats, averaging a score of -0.09. Nebraska had no Democratic representatives in this period. Wisconsin had the most polarized Republicans, with an average score of 0.85, and Connecticut had the least polarized

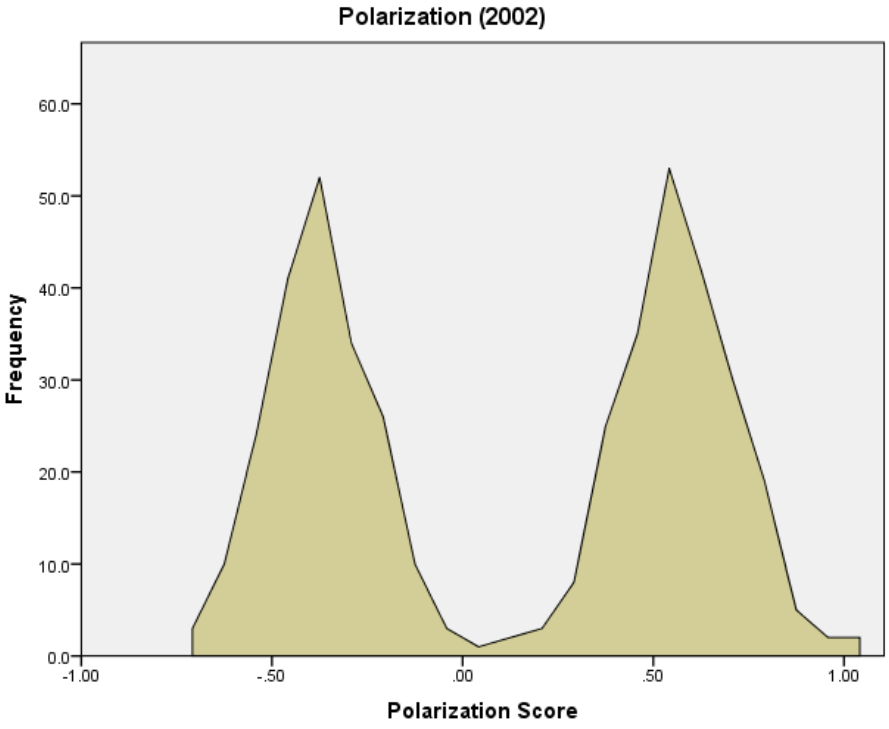
Republicans, averaging a score of 0.31. Hawaii, Maine, Massachusetts, and Rhode Island had no Republican representatives during this stretch.

State Statistics for Polarization (2002-2010)			
State	Avg Dem Score	Avg Rep Score	Standard Deviation
AL	-0.15	0.52	0.32
AZ	-0.36	0.80	0.61
AR	-0.22	0.52	0.37
CA	-0.44	0.67	0.55
CO	-0.33	0.77	0.56
CT	-0.37	0.31	0.32
FL	-0.35	0.61	0.46
GA	-0.3	0.77	0.55
HI	-0.37	N/A	0.12
ID	0.09	0.63	0.27
IL	-0.41	0.6	0.53
IN	-0.27	0.72	0.51
IA	-0.29	0.54	0.44
KS	-0.24	0.65	0.41
KY	-0.24	0.51	0.34
LA	-0.25	0.59	0.39
ME	-0.36	N/A	0.07
MD	-0.35	0.62	0.43
MA	-0.51	N/A	0.07
MI	-0.43	0.62	0.53
MN	-0.39	0.69	0.56
MS	-0.28	0.52	0.43
MO	-0.38	0.6	0.5
NE	N/A	0.56	0.11
NV	-0.28	0.6	0.46
NH	-0.3	0.61	0.47
NJ	-0.42	0.52	0.5
NM	-0.34	0.57	0.48
NY	-0.4	0.46	0.39
NC	-0.3	0.6	0.49
OH	-0.43	0.57	0.51
OK	-0.09	0.59	0.29
OR	-0.42	0.57	0.41
PA	-0.3	0.49	0.41
RI	-0.38	N/A	0.02
SC	-0.37	0.76	0.54
TN	-0.24	0.73	0.5
TX	-0.31	0.7	0.51
UT	-0.11	0.78	0.44
VA	-0.29	0.61	0.44
WA	-0.38	0.56	0.47
WV	-0.31	0.43	0.37
WI	-0.44	0.85	0.66

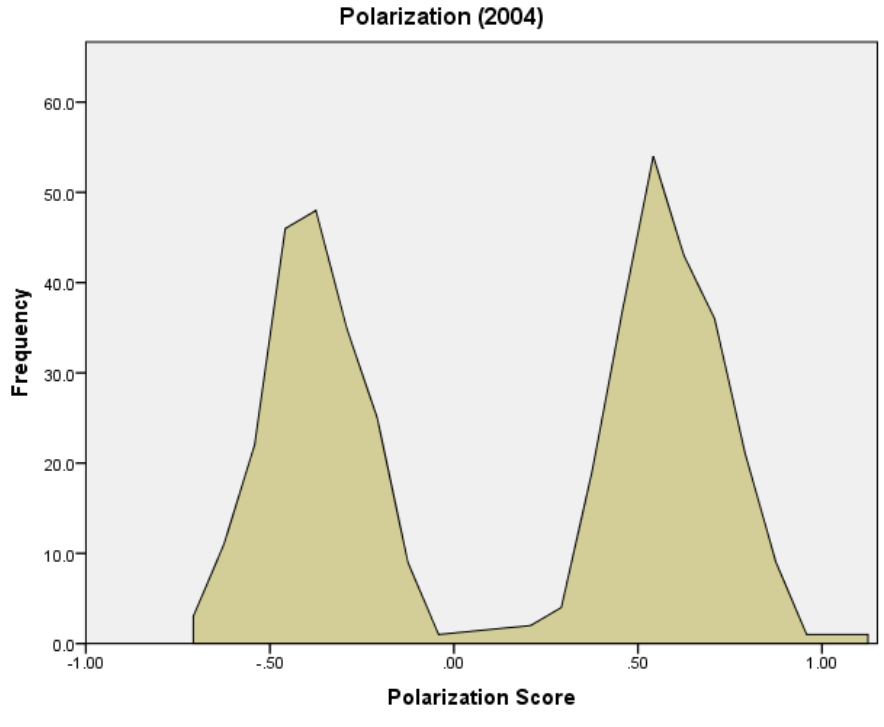
The following table is also concerned with polarization data. It shows the average polarization scores for all Democrats and Republicans for each year of elections, as well as the standard deviation of all scores for each year. The average Democratic score remained relatively constant, ranging between -0.34 and -0.39. However, the average Republican score increased steadily, rising from 0.57 in 2002 to 0.68 in 2010. The distance between each party's average score increased every year.

Yearly Statistics for Polarization (2002-2010)			
Year	Avg Dem Score	Avg Rep Score	Standard Deviation
2002	-0.37	0.57	0.49
2004	-0.38	0.59	0.51
2006	-0.36	0.63	0.52
2008	-0.34	0.66	0.52
2010	-0.39	0.68	0.56

To further illustrate these scores, the following graphs show the number of representatives that achieved certain scores for each election year. Barbara Lee (D-CA) had the lowest scores in 2002 and 2004, scoring a -0.69 in both years. In 2006, Pete Stark (D-CA) had the lowest score, earning a -0.7. Dennis Kucinich (D-OH) had the lowest scores in 2008 and 2010, scoring a -0.73 and -0.78 respectively. Ron Paul (R-TX) had the highest score in each year, earning scores of 1.02, 1.09, 1.16, 1.23, and 1.29. Thus, the lowest score decreased in each election, and the highest score increased. Additionally, the scores are distinctly clustered by party with a gap in the middle range of scores.



Source: Lewis, Poole & Rosenthal



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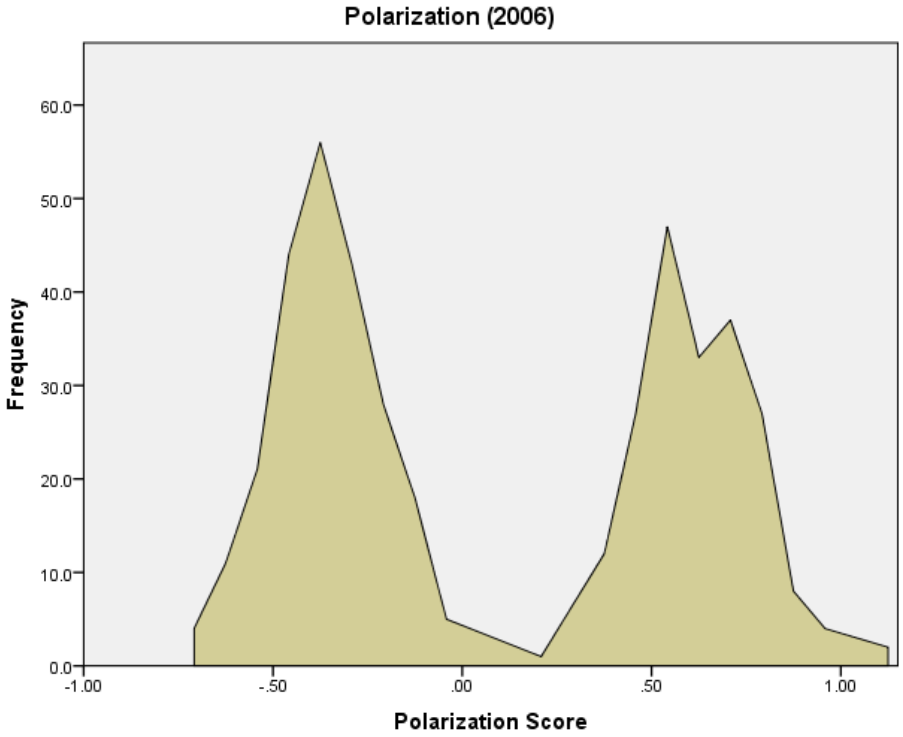

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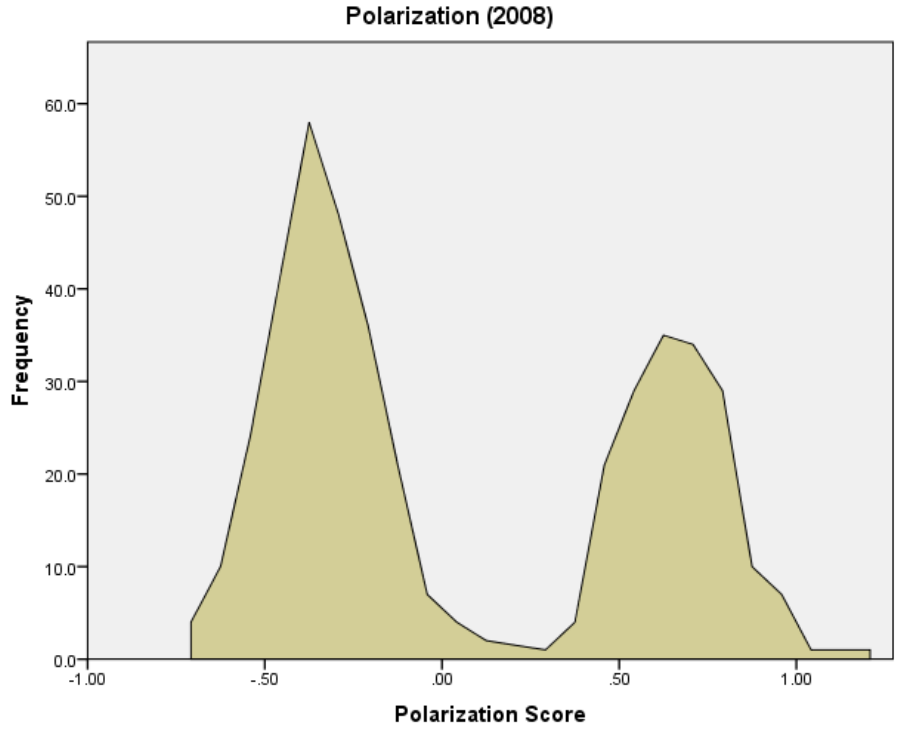

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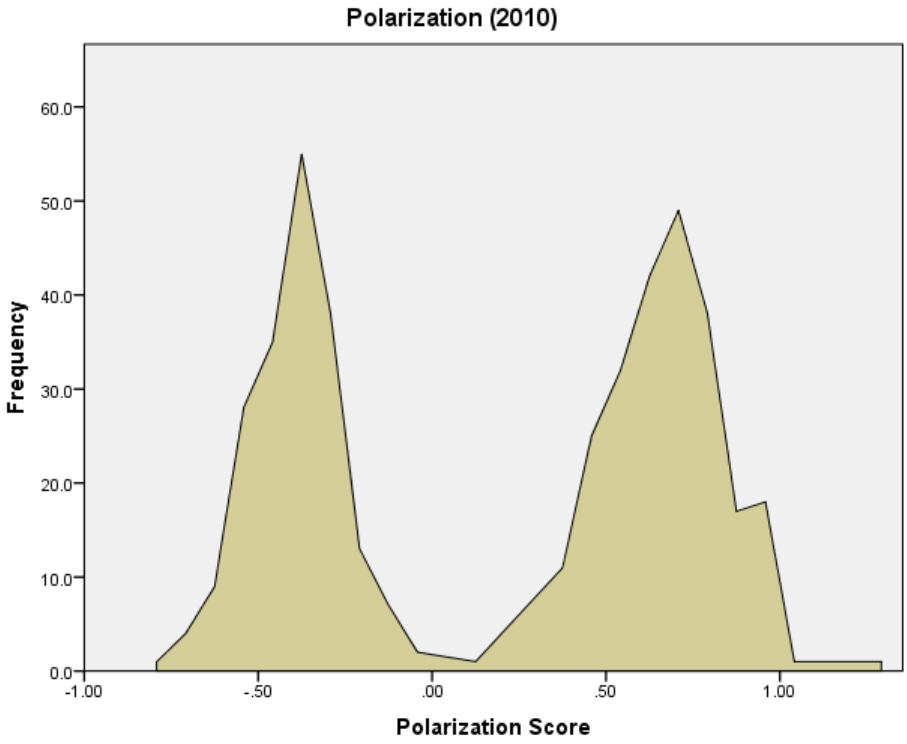

Source: Lewis, Poole & Rosenthal

The table below shows the average percentage of the vote garnered by the winning candidates for each type of redistricting model, as well as their standard deviations.

Congressional Election Outcomes by Redistricting Type		
Redistricting Type	**Avg Pct of Vote**	**Standard Deviation**
Commission	63.5%	9.7%
Hybrid	67.3%	11.3%
Legislature	68.6%	13.5%

The following tables all pertain to the three regression analyses used in this paper. The first illustrates the relationship between the method of redistricting (independent variable) and the percentage of the total vote a winning candidate receives (dependent variable). The types of redistricting, as mentioned above, were coded as dummy variables, and so only two types were used in the regression. For commission systems, the coefficient was -5.078, and it was significant

below the 0.001 level. For hybrid systems, the coefficient was -1.464, and it was significant at the 0.185 level.

Dependent Variable: Percentage of Vote			
Independent Variable	**Coefficient**	**Standard Error**	**Significance**
Constant	68.576	0.307	<0.001
Commission	-5.078	0.981	<0.001
Hybrid	-1.464	1.105	0.185

The second and third regressions used show the relationship between percentage of the votes a winning candidate receives (independent variable) and the representative's polarization score (dependent variable). The first table shows this relationship amongst Democrats, and the second table amongst Republicans. The Democratic polarization score had a coefficient of -0.004 and was significant below the 0.001 level. However, the Republican score only had a coefficient below 0.001, and a significance level of 0.754.

Dependent Variable: Democrat Polarization Score			
Independent Variable	**Coefficient**	**Standard Error**	**Significance**
Constant	-0.101	0.020	<0.001
Percentage of Vote	-0.004	<0.001	<0.001

Dependent Variable: Republican Polarization Score			
Independent Variable	**Coefficient**	**Standard Error**	**Significance**
Constant	0.633	0.028	<0.001
Percentage of Vote	<0.001	<0.001	0.754

Analysis

Competitive Districts

The most important thing that can be grasped from the data presented on election outcomes is simply that elections are not competitive. In this stretch of five elections, the average percentage of the total vote garnered by the election winner was 68 percent, with a standard deviation of 13.1 percent. That means that the average representative is running in a very safe district. The least competitive states were Massachusetts and Alabama. The average in Massachusetts was 82 percent and Alabama's was 76 percent. Even when factoring in the standard deviations, both 17 percent, the majority of districts in these states are still safe, having winning percentages of at least about 60 percent.

The most competitive states were New Hampshire and Iowa. New Hampshire's average was 55 percent with a standard deviation of four percent. However, New Hampshire only has two districts, so this statistic does not tell us all that much. Iowa, however, similarly averaged 57 percent, with a standard deviation of five percent, but has more districts. This means that the majority of its districts are relatively competitive, with the winning candidates garnering between about 52 and 62 percent of the vote. As mentioned in a previous section, Iowa takes very deliberate steps to ensure competitive districts.

Polarization

In terms of polarization scores, Democrats have held relatively constant, ranging between -0.34 and -0.39. However, Republicans have increased significantly, rising from 0.57 in 2002 to 0.68 in 2010. As mentioned in section on methodology, this does not necessarily mean that Republicans are becoming more “conservative” while Democrats remain the same. However, it

does show that Republicans are moving proportionally further away from the center than Democrats. The most salient observation that can be drawn from the polarization scores is that, in the course of these five elections, the distance between the parties is steadily increasing. The difference between the parties' average scores was 0.94 in 2002, but 1.07 in 2010, which is a 14 percent increase.

Redistricting

The data clearly shows that the model of redistricting has an effect on the competitiveness of districts. Winners of districts that were redrawn by legislatures garnered an average of 69 percent of the vote. However, hybrid systems that give legislatures less autonomy in redistricting had winners with an average of 67 percent. States that only use independent commissions had the most competitive average percentage of votes, which was 63.5 percent.

Regression

To further strengthen the observations above, this paper also uses a linear regression analysis. Using the regression data, much can be learned about the effect of the independent variables. In the first regression analysis, the independent variables are the types of redistricting. For commission systems, the coefficient is negative. This means that there is a negative relationship between this redistricting type and the percentages of votes, relative to legislature systems. The value of the coefficient for commission systems is -5.078. Thus, when a district uses a commission system, the average percentage of the vote garnered by the election winner is about 5 percentage points lower than in a legislature system. The significance of this method of redistricting is below 0.001, meaning that there is only a 0.1 percent chance that the correlation occurs randomly. Similarly, the coefficient for hybrid systems is negative, and also has a value of -1.464. This means that the average percentage of the vote garnered by the election winner in a

hybrid system is about 1.5 percentage points lower than in a legislature system. However, the significance is 0.185, which is above the 0.05 limit discussed previously.

In the second regression analysis, the independent variable is the vote percentages. The coefficient of this variable is negative, meaning that there is a negative relationship between the vote percentages and the Democratic polarization scores. This means that as the vote percentages increase, the Democratic polarization scores decrease. The value of the coefficient for vote percentages is -0.004. Thus, when the vote percentage increases by 10 percentage points, the Democratic polarization score is expected to decrease by 0.04. The significance of the percentage of votes is below 0.001, meaning that there is only a 0.1 percent chance that the correlation occurs randomly. All of this means that, when a district elects a Democrat, the less competitive the election is, the lower the winner's score will be. Thus, the winner will become increasingly polarized because his or her score becomes increasingly negative in value.

In the third regression analysis, the independent variable is also the vote percentages, but the dependent variable is now Republican polarization scores. The coefficient is positive, meaning that there is a positive relationship between the vote percentage and the polarization score. However, the level of significance is 0.754. This means that there is a 75.4 percent that the relationship is random, which is far above the five percent standard. Thus, the levels of polarization for Republican winners do not increase when their districts are less competitive.

Conclusion

From the data and analysis examined in this paper, many conclusions can be drawn. One of the major findings is that states' districts were not competitive in this time period. The average district winner garnered 68 percent of votes, which is a very safe margin of victory. Another

conclusion that can be drawn is that Congress became more polarized in this time period, as the distance between the average polarization scores of Democrats and Republicans increased by 14 percent. While Democrats average polarization scores remained relatively constant, Republicans scores rose significantly. It can also be concluded that the percentage of votes garnered by winning candidates is dependent on a state's method of redistricting at a very significant level. Simply put, states with lower levels of redistricting authority given to their legislatures tend to have more competitive elections. Additionally, the polarization scores of Democratic representatives are dependent on the percentage of votes garnered by winning Democratic candidates at a very significant level. This means that Democrats from less competitive districts tend to be more polarized. However, there is not a significant relationship between Republican polarization scores and their percentage of votes, meaning that Republican representatives from less competitive districts are not necessarily more polarized.

Based on these conclusions, this paper agrees with Mann and Cain that redistricting is only one factor responsible for contemporary climate of declining competition and growing polarization of the parties (2005). While redistricting reform is not a panacea for these problems, it is not an unreasonable place to start (Mann and Cain, 2005), and there is clearly an argument for policy changes in the methods of redistricting. To this end, much can be learned from the Iowa system, which is truly unique from any other state. From a theoretical standpoint, Iowa has implemented a system designed to eliminate the possibility of gerrymandering, or drawing districts based on partisan agendas. It is drawn by a non-partisan government agency, which diminishes the likelihood of party leaders having a strong impact on redistricting. Additionally, the redistricting body cannot consider political data. Such factors as previous election results, the residences of incumbent candidates, and the political affiliations of registered voters are ignored,

which is not the case in almost all states. Rather than looking at these indicators, the Iowa system is concerned with drawing logically sensible districts. Its overarching concern is to create districts that are equal in population, followed by keeping districts compact, maintaining political boundaries, and keeping districts contiguous (Nelson, 2010).

Not only has Iowa implemented a thoughtful system for keeping partisan bias out of districts, it also has been successful. In this time period, the winning candidates in Iowa garnered an average vote percentage of 57.1 percent. That was the second lowest of the 43 states examined, and the lowest among states with more than two districts. Iowa's candidates were also not very polarized in this time period. Its Democratic representatives averaged a score of -0.29, and its Republican representatives averaged a score of 0.54. These were the thirteenth and tenth least polarizing scores, respectively, and were both below the national averages in all five elections.

There are other factors that could account for the competitiveness of districts and polarization. One is the differences in voting tendencies of different regions. For example, the southeastern United States might vote with different results than the West Coast. Another factor could be the party makeup of voters within a state. Massachusetts, for example, had no Republican representatives in this time period, and also had districts that were very non-competitive, meaning that there could be an overwhelming number of Democrats in the state. Incumbency status could also be an important factor because incumbents have certain advantages over new candidates. However, by implementing policies similar to Iowa, other states would hopefully be able to make their districts more competitive. For Democrats, more competitive districts would most likely translate into less polarized candidates. While Republican polarization scores were not tied to the competitiveness of their districts, more competitive

districts and more centrist Democrats would hopefully inspire Republican voters and legislators to become more centralized and willing to cooperate on legislation. However, more research is needed to determine the root of the growing Republican level of polarization, as well as further policy changes that can help reduce it.

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